



US006056716A

United States Patent [19][11] **Patent Number:** **6,056,716****D'Antonio et al.**[45] **Date of Patent:** **May 2, 2000**[54] **HYPODERMIC FLUID DISPENSER**[75] Inventors: **Nicholas F. D'Antonio**, Liverpool;
Linda F. D'Antonio, Syracuse, both of
N.Y.; **John T. Wagner**, Drexel Hill, Pa.[73] Assignee: **D'Antonio Consultants International
Inc., N.Y.**[21] Appl. No.: **08/738,303**[22] Filed: **Oct. 25, 1996**

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Related U.S. Application Data

[63] Continuation-in-part of application No. 08/253,416, Jun. 3, 1994, Pat. No. 5,569,190, which is a continuation-in-part of application No. 07/818,235, Jan. 8, 1992, Pat. No. 5,318,522, which is a continuation-in-part of application No. 07/336,636, Apr. 7, 1989, Pat. No. 5,080,648, which is a continuation of application No. 07/059,620, Jun. 8, 1987, abandoned.

[51] **Int. Cl.**⁷ **A61M 5/30**[52] **U.S. Cl.** **604/68; 604/134**[58] **Field of Search** **604/68, 72, 198,
604/207, 46, 47, 131, 134**[56] **References Cited****U.S. PATENT DOCUMENTS**

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A jet injector system for injecting fluid into a body. The jet injection system includes capsules for holding the material to be injected, apparatus for applying force to the capsule(s) to eject the injection material(s) and a perforator for directing the jet stream for the respective materials into the body. A flyweight system is described for developing jet injection pressures, and latching devices control the flyweight system. An injector system for injecting more than one fluid is described.

18 Claims, 23 Drawing Sheets